

# *Putting Power to the Edge*

*LTG Steven W. Boutelle*

*CIO/G-6*

*10 October 2003*

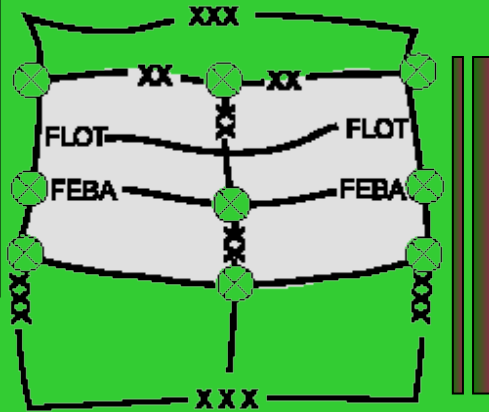


# Evolving IT War Fight: A Changed Paradigm

*Yesterday.....*

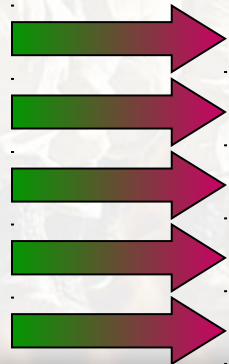


Contiguous  
Areas of Operations



Linear Operations

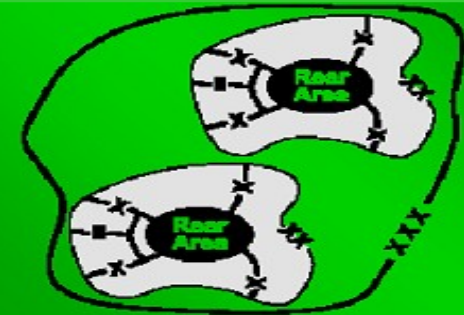
- Area-Centric
- Low Data Demand
- Large Footprint
- Voice Reliant
- LOS Backbone



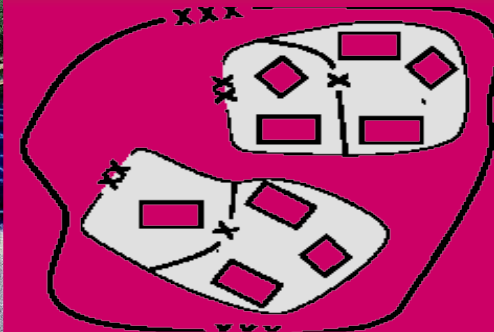
*....Tomorrow*



Linear Operations



Non-Contiguous  
Areas of Operations



Non-Linear Operations

- Simultaneous Asymmetric Operations
- High Information Demand
- Embedded, Multi-Functional
- Collaboration Reliant
- Ubiquitous Transport

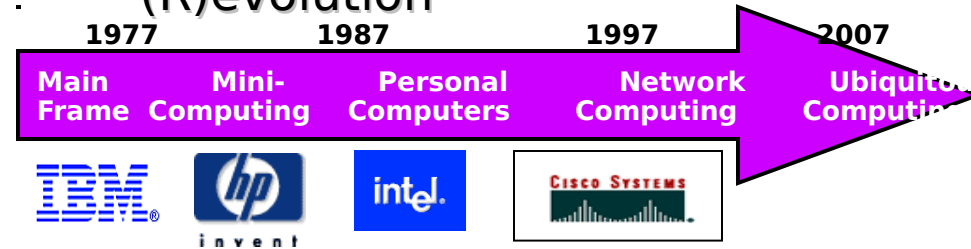


# Driving the C4 Evolution

## Emerging Strategic Environment

- Enhanced Nationalism & Rejection of the West
- Ungoverned groups - terrorism
- Readily available information technology
- Technological acceleration
- Unstable power balances

## Information Age (R)evolution



Just Cause



Provide Comfort

**From 1989-1999, there were 38 US military deployments .....about once every 14 weeks**



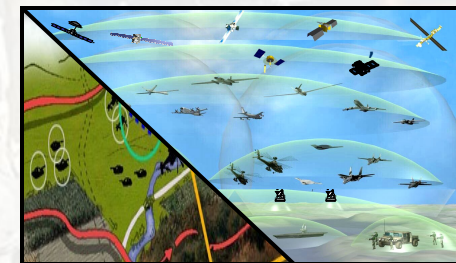
Allied Force

**“The two truly transforming things, conceivably, might be in information technology and information operation and networking and connecting things in ways that they function totally differently than they had previously.” - Secretary Rumsfeld, Aug 2001**

## Network-Centric Information Advantage

Information Quality

- Content
- Accuracy
- Timeliness
- Relevance



Local Regional Global

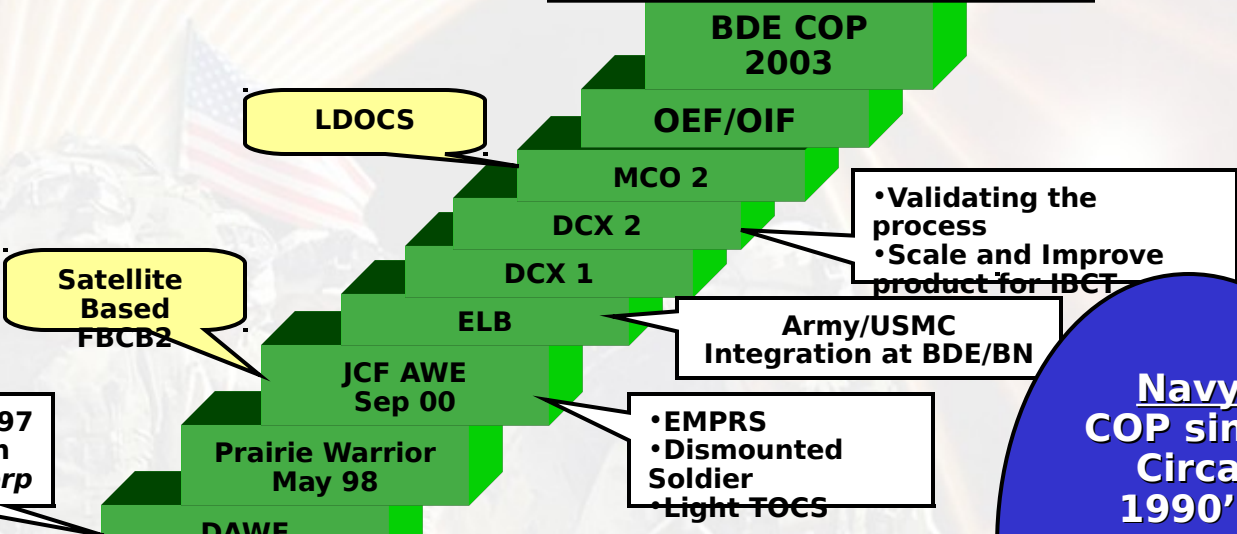
**Network Centric Operations  
The Way Ahead**



# Exploiting Lessons Learned

**Air Force  
COP since  
Circa 1948  
-  
Thousands  
of Aircraft**

**Joint COP**



**Circa June 1997  
CSA Decision  
Digitize III Corp**

**•Land Warrior - 200X**

**Navy  
COP since  
Circa 1990's  
-  
Hundreds  
of Ships  
and  
Aircraft**

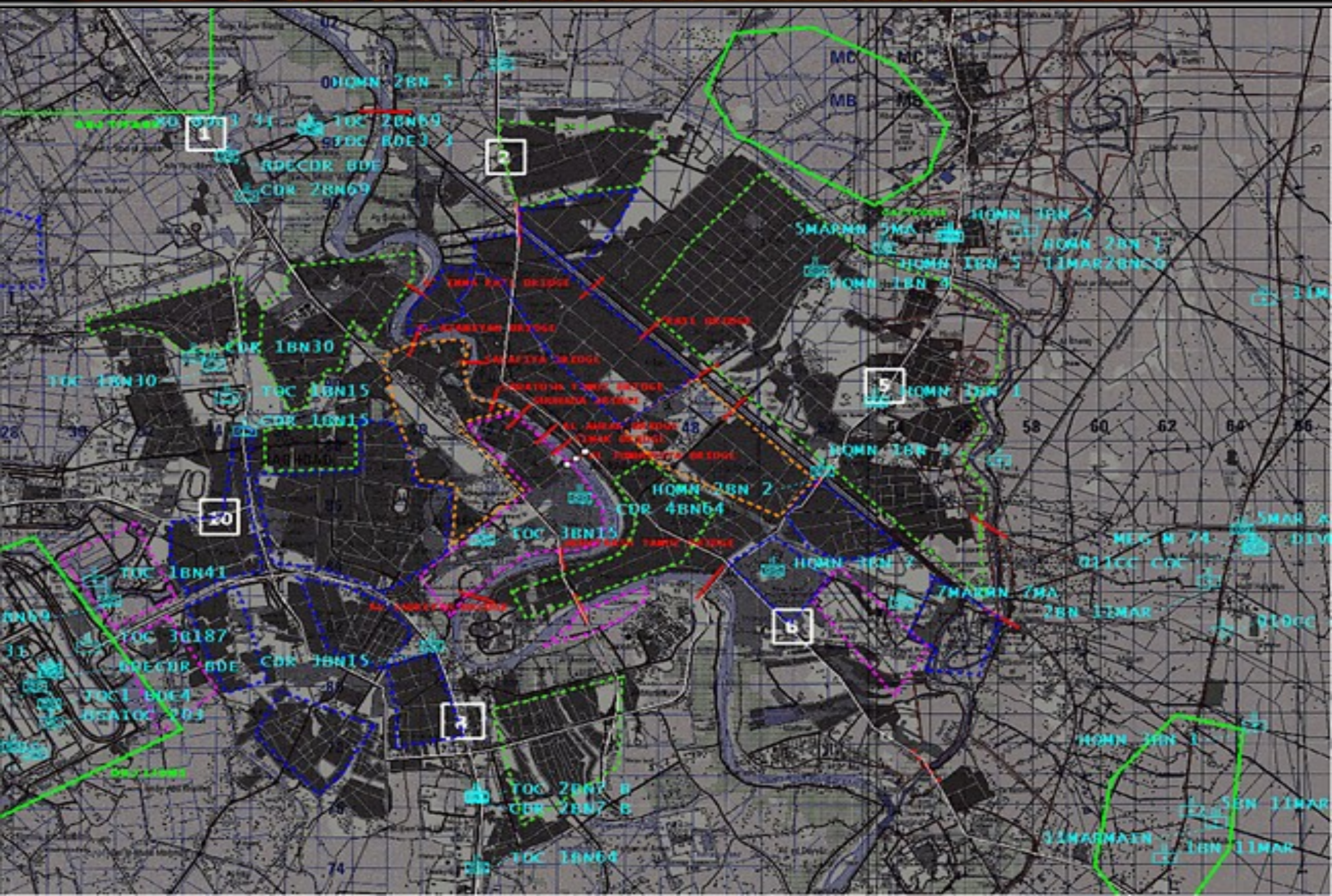
**Army  
COP since  
2003  
- Tens of  
Thousands  
of  
Vehicles,  
Aircraft,  
Units, etc.**

**•Mobile Strike Force  
•Army After Next  
Strike Force**

**Demonstrated Light  
Warfighter Issues and  
Digitization**

**Army "bottom up" approach took too long<sub>4</sub>**









# Power of Network Centric Warfare

## **Blue Force Tracking: *Part of the Network Centric Warfare Future***

**101<sup>st</sup> Airborne -**

***101<sup>st</sup> MI Officer: "BFT is saving our butts over here, comms-wise!"***

**USMC -**

***USMC Division Forward Senior Watch Officer: "Had it not been for BFT, we probably would have fired upon a friendly 3ID unit"***

**USMC -**

***CDR, TSG, USMC: "We would die without this system"***

**82<sup>nd</sup> Airborne -**

***1<sup>st</sup> BDE XO: "FBCB2 is a winner! When all other means of communications failed, FBCB2 carried the day"***

**3<sup>rd</sup> Infantry Division -**

***Night Shift Operations Officer, DMAIN: "At the DMAIN on the move, FBCB2 was the only thing we had for SA"***



# CIO/G-6 Imperatives

- ★ **Reshape Signal Units**
  - Reshape people & equipment for relevancy
    - Joint Data Packages (eg. JCSE, SCAMPI)
  - Include satellite plan
  - Plan to “fix” tactical units for 5-7 years like OIF
- ★ **Manage the Army’s GIG contribution as an Enterprise: GuardNet (3300 Sites), ARNet (940 Sites), and Army Networks**
  - Realign and optimize for the Joint Warfighter
- ★ **Network the Force, including Logistics**
- ★ **Affect the acquisition of C4, empower AAIC for acquisition to ensure systems are Joint from birth**
- ★ **Embrace small unit operations**
- ★ **Lead Army campaign for bandwidth**

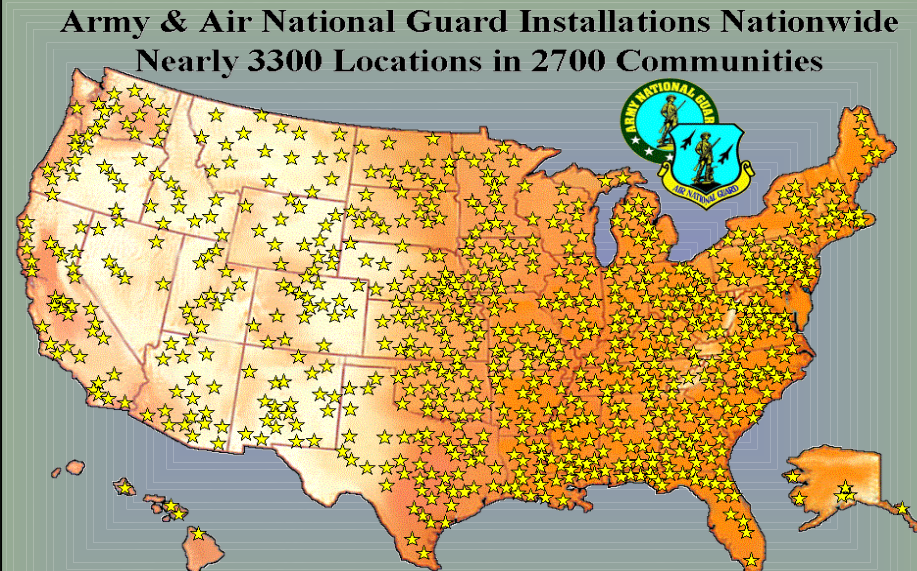
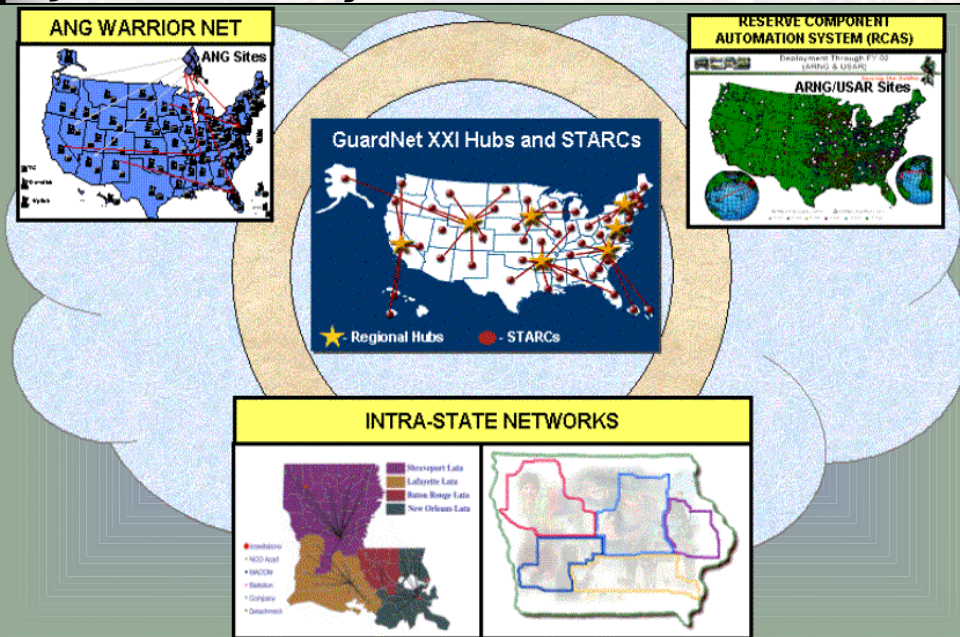
***We will sustain/increase momentum with AKM and Current Operations***



# Army Network Consolidation

- **Network consolidation - Single Enterprise Network**
  - MOAs with USAR and NGB - one Army Enterprise Network
  - Acquisition and management under one element - NETCOM (Network Enterprise Technology Command)
- **Merged Network Operations Security Centers (NOSCs) - NGB, USAR, and NETCOM - one multi-component network management construct**
  - Positions Army to support HLS

*June 03 - Army CIO/G-6 is CIO for USAR*







# Army's Networks



## Today

- Old Copper
- Analog, Aging Switches
- Limited Growth Ability

## Installation Information Infrastructure Modernization Program (I3MP)



*Home Station  
Operation Center*

## 2003-2009

- Fiber or New Copper
- Latest Digital Switches
- Latest network equipment for high-speed data
- Upgrade Gateways to DISN/GIG-BE

**Funding:  
\$2.8B  
(Army)**

- Refining HSOC role with TRADOC
- I3MP locations being realigned
- Locations looked at WRT GIG-BE
- Today, only selected Buildings on selected installations

***We must fix the Last  
Mile to the  
Installation***

**Locations:  
All Army installations  
including ARNG and  
Army Reserve**



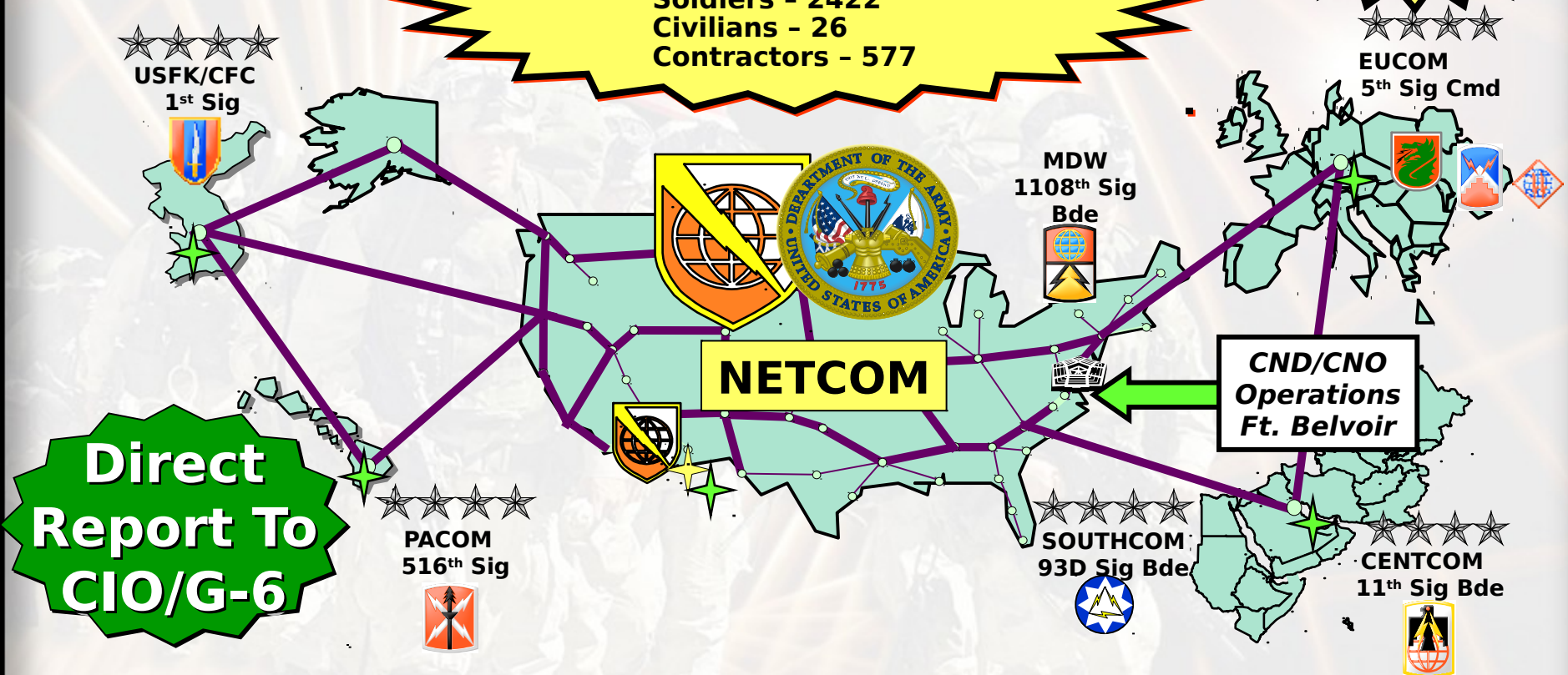
# Network Enterprise Technology Command (NETCOM)

## Supporting the Warfighter

14,000  
Soldiers/Civilians  
And Contractors

Currently Deployed In 21 Countries  
43 countries since 2002:  
Soldiers - 2422  
Civilians - 26  
Contractors - 577

Daily operations  
- 300 Facilities  
In 14 Countries  
Worldwide



Direct  
Report To  
CIO/G-6

Single authority to operate, manage, and protect Army's Infostructure

Supporting Combatant Commanders World Wide



Fighting & Defending Army Networks from Home Station to Foxhole





# Global Information Grid (GIG) Bandwidth Expansion Program

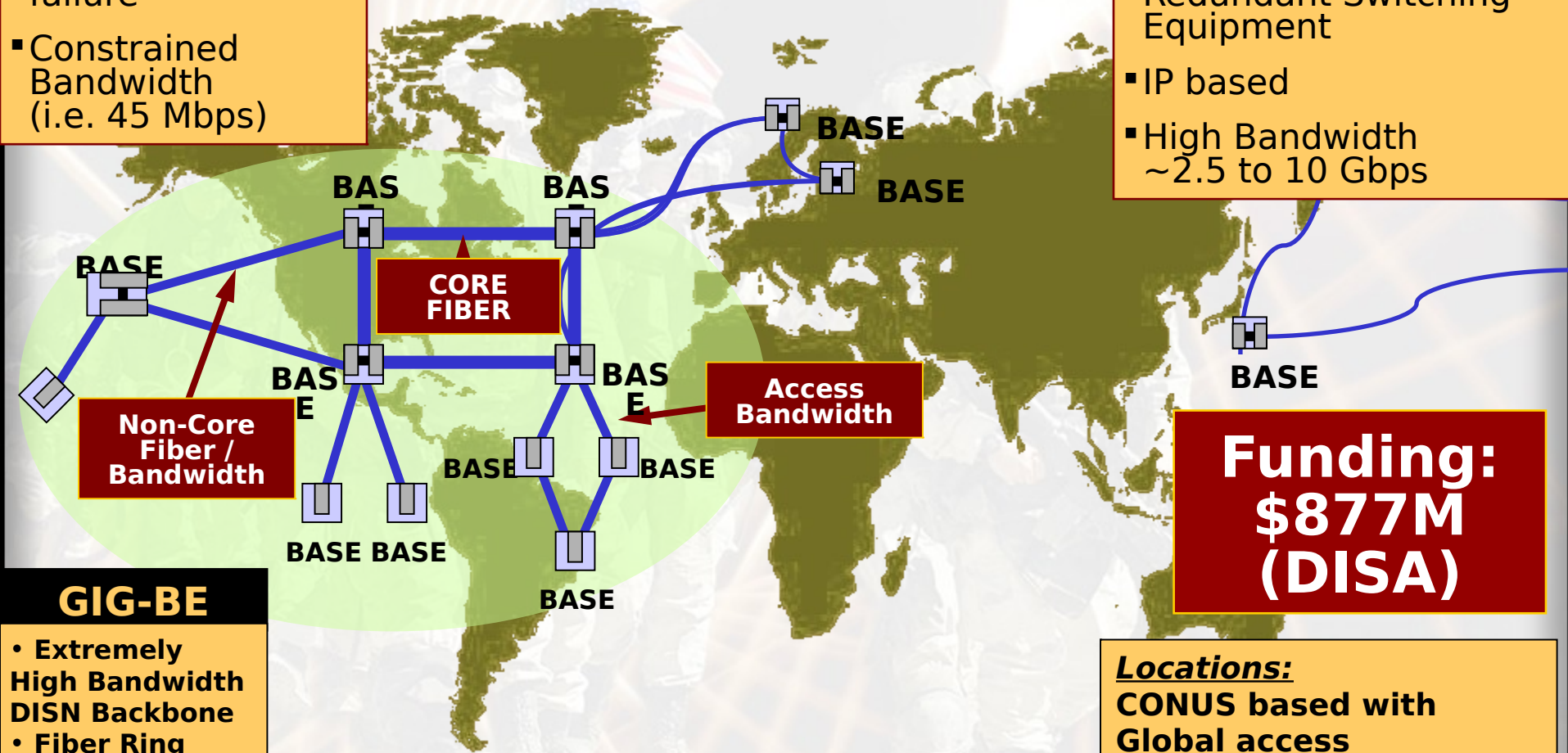
## Today

- Multiple Carriers
- Single Points of failure
- Constrained Bandwidth (i.e. 45 Mbps)

**Ultra-High  
Bandwidth to Key  
Access Points**

## 2003-2004

- Physically Diverse Access
- Redundant Switching Equipment
- IP based
- High Bandwidth ~2.5 to 10 Gbps



## GIG-BE

- Extremely High Bandwidth DISN Backbone
- Fiber Ring

**Funding:  
\$877M  
(DISA)**

**Locations:  
CONUS based with  
Global access**



# Teleport

Today

## STEP

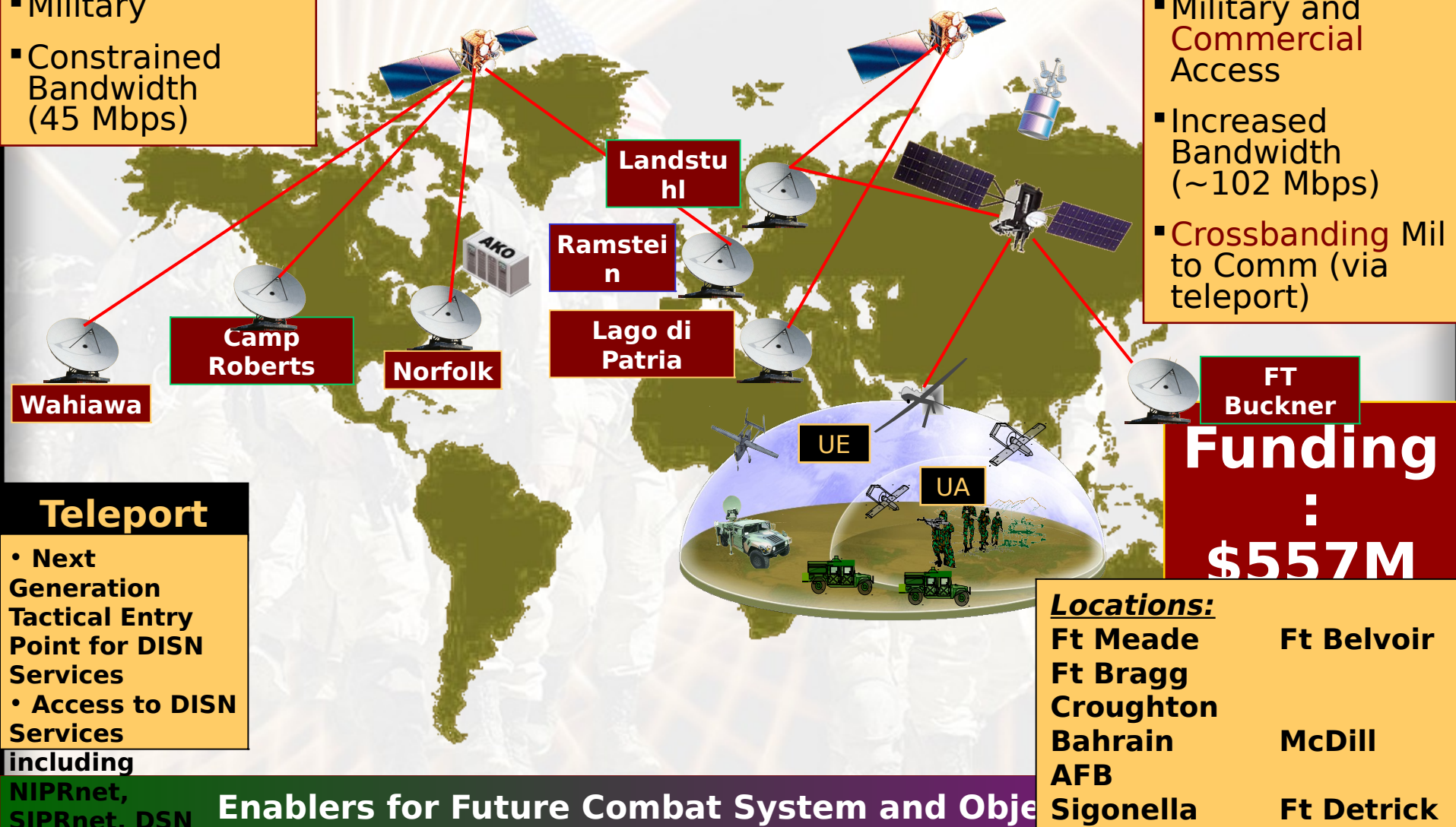
- Military
- Constrained Bandwidth (45 Mbps)

## Global Access To the Warfighter

2003-2007

## Teleport

- Military and Commercial Access
- Increased Bandwidth (~102 Mbps)
- Crossbanding Mil to Comm (via teleport)



## Teleport

- Next Generation Tactical Entry Point for DISN Services
- Access to DISN Services

including

NIPRnet, SIPRnet, DSN

Enablers for Future Combat System and Objectives

**Funding**  
:  
**\$557M**

### Locations:

Ft Meade	Ft Belvoir
Ft Bragg	
Croughton	
Bahrain	McDill
AFB	
Sigonella	Ft Detrick





# Global Broadcast Service (GBS)

Today

- Worldwide Satellite Capability
- All (3) Primary Injection Point (PIP) Operational

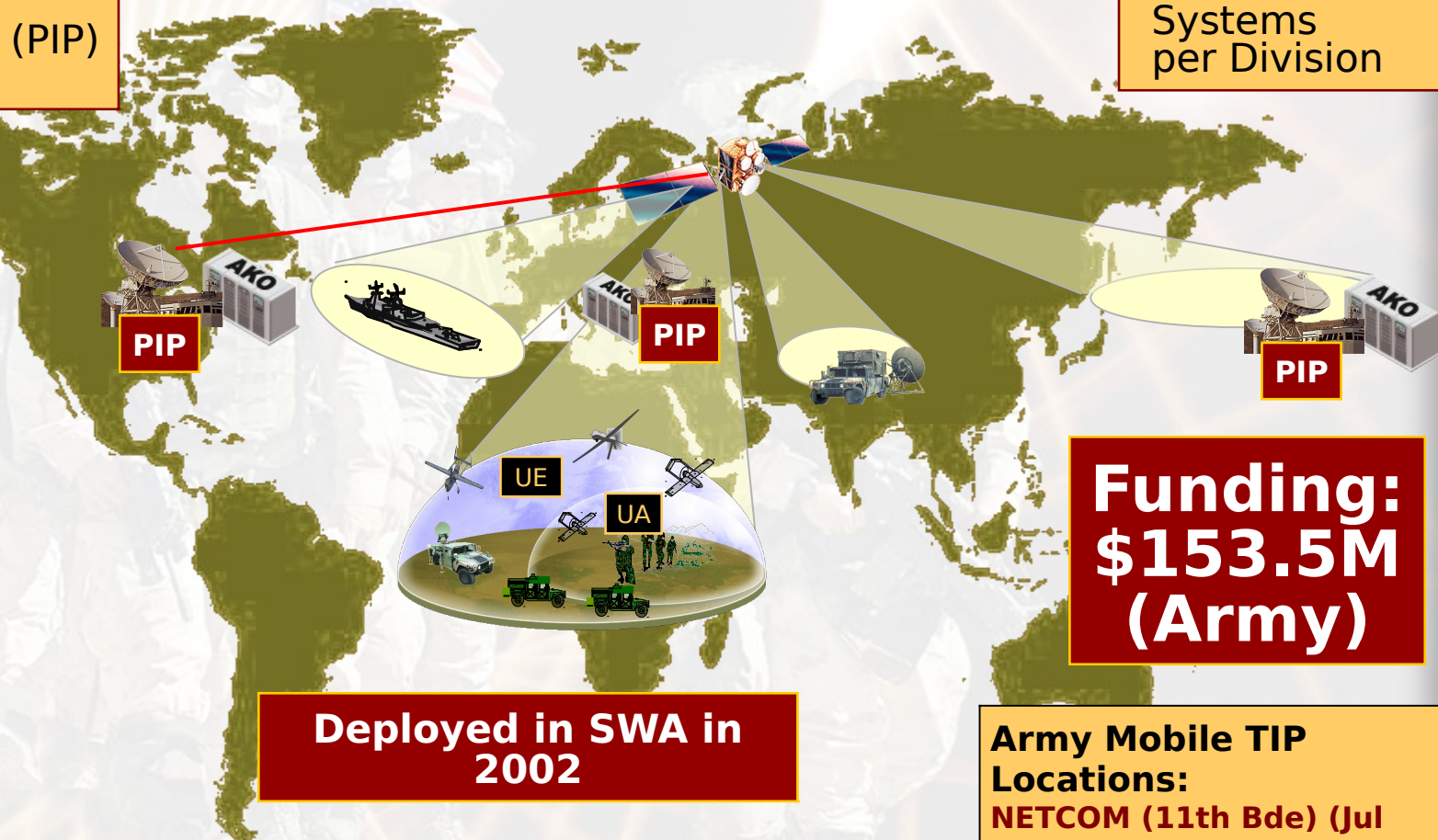
**Continuous *High-Speed Data* & Video to the Warfighter - GLOBALLY!**

2003-2011

- 456 Light Terminals
- 27x Rec Systems per Division

## GBS

- Downloads Bulk Information to requiring units such as:
  - ✓ ATO
  - ✓ Ops/Intel Updates
  - ✓ CROP data
  - ✓ Imagery
  - ✓ Mapping
  - ✓ Video
  - ✓ News Services
  - ✓ Weather
  - ✓ Log data



**Funding:  
\$153.5M  
(Army)**

**Deployed in SWA in  
2002**

**Army Mobile TIP  
Locations:  
NETCOM (11th Bde) (Jul  
02)**

**Enablers for Future Combat System and Objective Force**

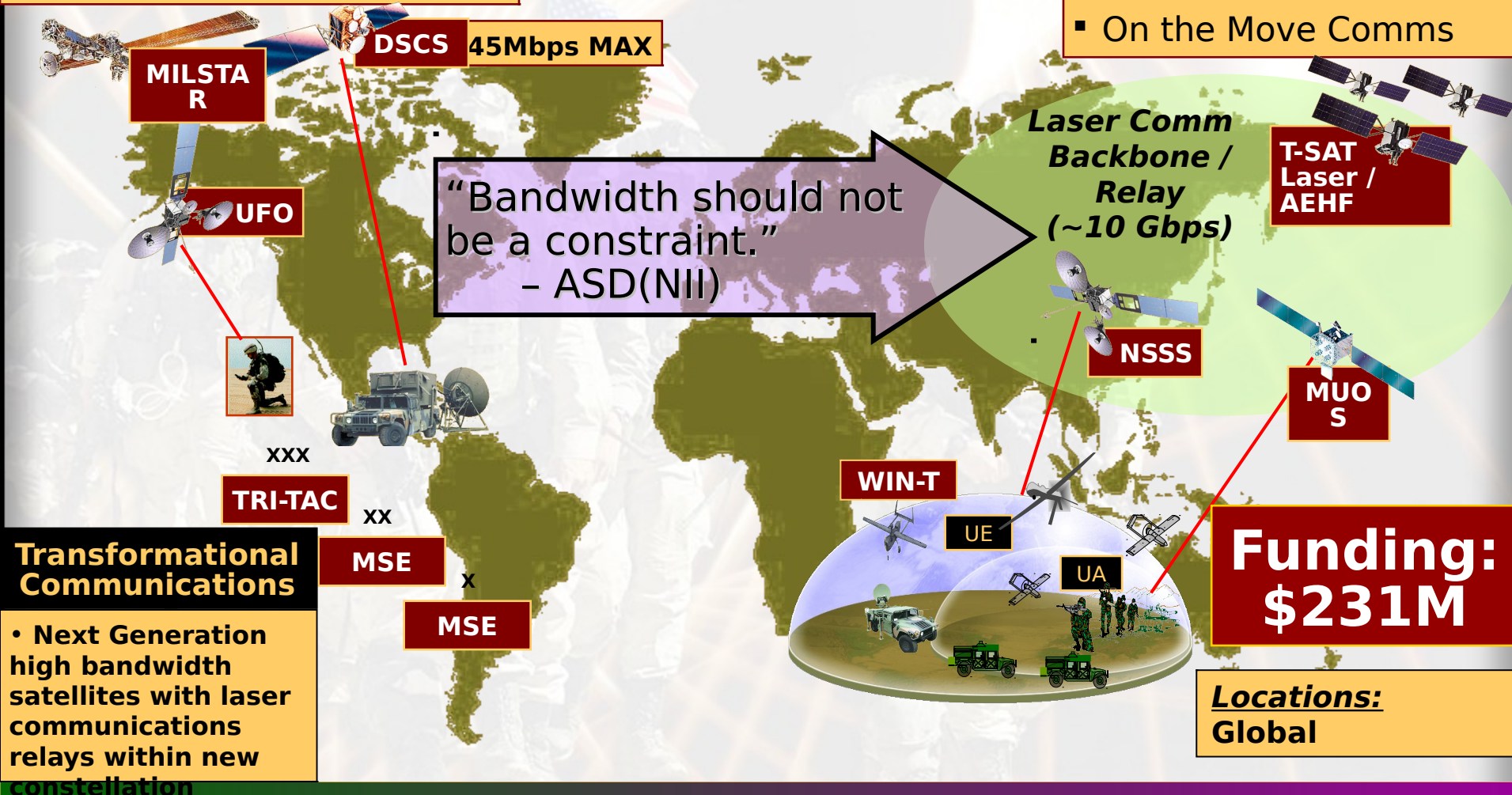
# Transformational Communications

Today

- Constrained Bandwidth
- Stove-piped SATCOM

2003-20XX

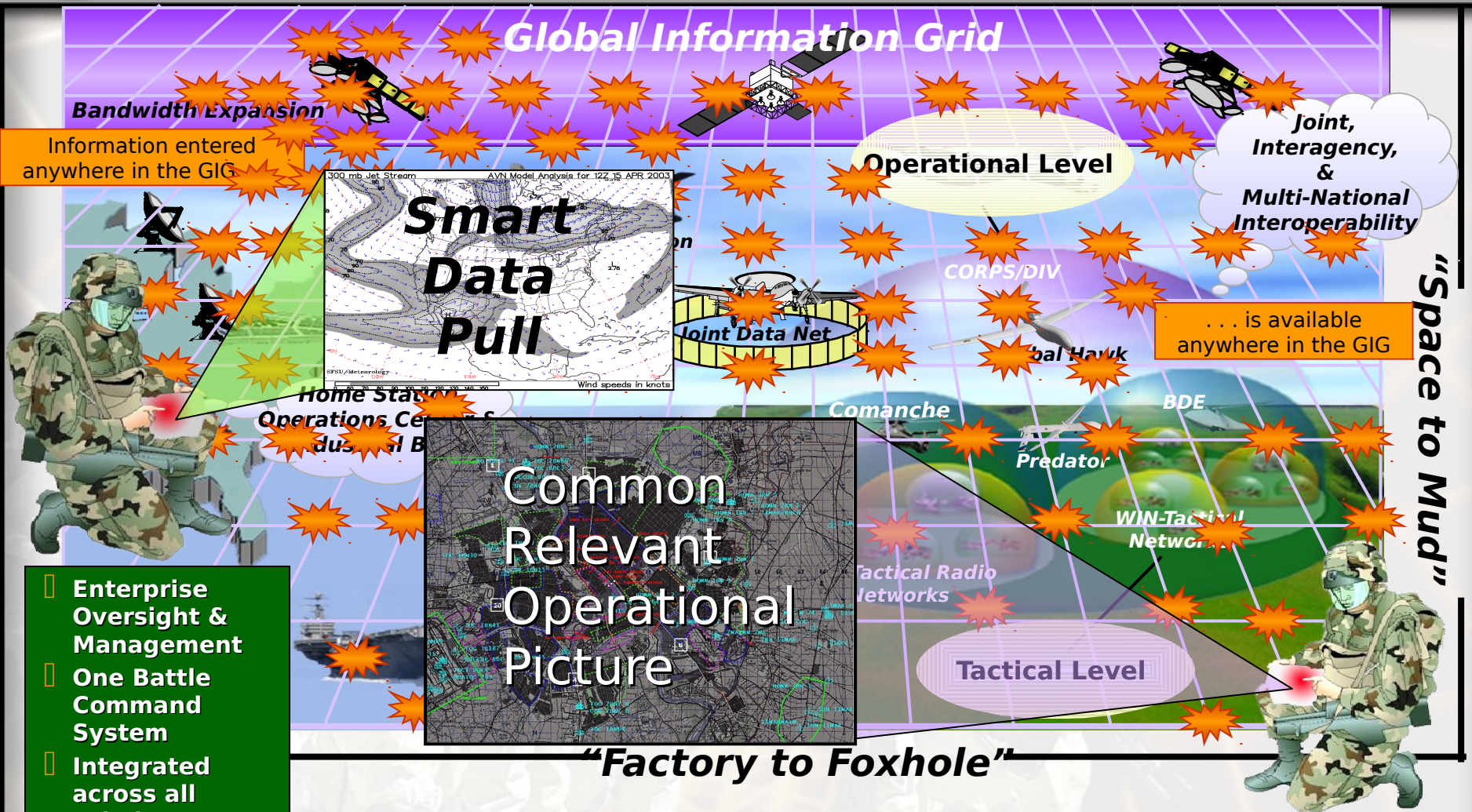
- “Big Pipes”
- Networked satellites
- On the Move Comms



Enablers for Future Combat System and Objective Force



# Future Force C4 Operational Concept



- Enterprise Oversight & Management
- One Battle Command System
- Integrated across all echelons
- Virtual Collaboration
- Reduce IT footprint
- Enterprise Knowledge

The Objective Force C4 architecture provides the framework for vertical & horizontal integration, specifies interfaces and relationships internal and external to the Army... Joint, Interagency, and Multi-National





# This is Not Just About Technology

## Global Terrorist Incidents

1968-1997 = 8509 (20 Years)  
1998-2003 = 7053 (6 Years)



- Al Qaida
- Islamic Jihad
- Hamas
- Hisbollah
- Palestine Liberation Front
- Etc., Etc.

• Trained and  
Eduated - Phd's,  
Engineers,  
technicians  
• Highly  
Dedicated

Threat Level = **HIGH**

OCT 23, 1983  
Marine Barracks  
241 Marines killed



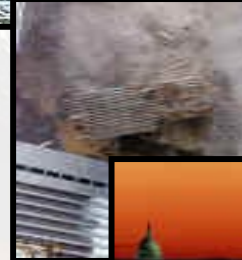
Aug 7 1998  
U.S. Embassies  
In East Africa  
54 killed  
5000 Injured



Oct 12, 2000  
USS Cole  
17 Sailors killed  
39 Injured



Sept 11, 2001  
WTC/Pentagon  
3000+ killed  
thousands more



**335 Terrorist Attacks**  
**Worldwide Since 9-11**







# Questions?

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CIO/G-6